Abstracts

Improving the Power-Added Efficiency of FET Amplifiers Operating with Varying-Envelope Signals

A.A.M. Saleh and D.C. Cox. "Improving the Power-Added Efficiency of FET Amplifiers Operating with Varying-Envelope Signals." 1983 Transactions on Microwave Theory and Techniques 31.1 (Jan. 1983 [T-MTT] (Joint Special Issue on Monolithic Microwave IC's)): 51-56.

A technique is proposed for improving the power-added efficiency of linear, class-A FET power amplifiers operating with varying-envelope signafs. It involves dynamically controlling the gate "dc" bias voltage with the envelope of the input RF signal. It is shown theoretically that this technique, which is referred to as "class A," results in a significant improvement in the power-added efficiency over standard class A, independently of the FET power gain. The efficiency is also better than that of standard class B if the FET gain is less than about 10 dB, which is the case normally encountered at higher microwave frequencies. The practical implementation of class /sup /spl equiv//A requires FET’s with essentially linear drain-current-versus-gate-voltage transfer characteristics.

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